

Comparative Retrospective Study of Lateral Anal Sphincterotomy with Fissurectomy versus Posterior Midline Sphincterotomy with Fissurectomy for Chronic Fissure-In-Ano

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Abstract:

Background: Fissure-In-Ano Is One Of The Most Common Proctological Conditions Presenting To The Surgical Outpatient Department. Elevated Internal Anal Sphincter Resting Pressure Leads To Local Mucosal Ischemia, Causing Severe Chronic Pain And Non-Healing. While Initial Management Is Pharmacological, Chronic Cases Often Necessitate Surgical Interventions Such As Lateral Anal Sphincterotomy (LAS) Or Posterior Midline Sphincterotomy (PMS).

Aims and Objective: This Retrospective Study Compared The Postoperative Outcomes Of LAS And PMS Combined With Fissurectomy, Specifically Evaluating Healing Rates, Postoperative Pain, Wound Infection, And Flatus/Stool Incontinence.

Materials and Methods: A Retrospective Analysis Of 50 Patients Who Underwent Surgical Intervention For Chronic Anal Fissure At Nootan General Hospital, Visnagar, Between April 2025 And March 2026, Was Conducted. Patients Were Divided Into Two Equal Groups: Group A Underwent LAS (n=25) and Group B Underwent PMS (n=25). Patients Were Monitored Over a 6-Month Follow-Up Period Via Outpatient Clinical Evaluation And Structured Interviews.

Results: The Postoperative Wound Infection Rate Was 2% (1/50) In The LAS Group and 4% (2/50) In The PMS Group. Temporary Incontinence To Flatus Occurred In 2% (1/50) Of Las Patients And 4% (2/50) Of PMS Patients, All Of Whom Recovered Spontaneously Within 10 Days. Transient Stool Incontinence Was Noted In Only One Patient (4%) In The PMS Group and None in the LAS Group. No Recurrences Or Permanent Incontinence Issues Were Reported During The 5-Month Follow-Up.

Conclusion: Both Techniques Are Effective, But Lateral Anal Sphincterotomy (LAS) Offers Distinct Clinical Advantages Over Posterior Midline Sphincterotomy (PMS), Including Significantly Lower Infection Rates, Faster Wound Healing, And Minimal Transient Impairment Of Sphincter Continence.

Keywords: Lateral Anal Sphincterotomy (LAS), Posterior Midline Sphincterotomy (PMS), Chronic Fissure-In-Ano, Fissurectomy.

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Introduction

Fissure-In-Ano Is a Highly Prevalent Condition Characterized By Significant Painful Morbidity In The Gen-eral Population. Anatomically, It Presents As a Longitudinal Mucosal Tear Extending From The Anal Verge To The Dentate Line, Frequently Accompanied By Secondary Changes Such As Hypertrophied Anal Papillae And Sentinel Skin Tags. Chronicity Leads To Hypertrophy Of The Internal Anal Sphincter, Raising Resting Anal Pressures And Setting Up a Cycle Of Local Ischemia That Prevents Natural Wound Healing.

Conservative Management Utilizing Topical Calcium Channel Blockers (e.g., Diltiazem or Nifedipine Gel) Aims To Reduce Sphincter Spasms. However, When Medical Therapy Fails, Surgical Interventions Become Necessary. The Two Primary Surgical Approaches Are Lateral Anal Sphincterotomy (Las) and Posterior Mid-line Sphincterotomy (Pms). This Retrospective Study Evaluates the Clinical Efficacy, Healing Rates, Compli-cation Profiles, and Recurrence Rates of These Two Techniques in a Cohort of 50 Patients Treated at a Single Tertiary Care Center.

Materials and Methods

Study Design and Population: This Retrospective Study Reviewed the Medical Records of 50 Patients Diagnosed with Chronic Anal Fissure Who Failed Conservative Medical Management and Underwent Surgical Treatment at Nootan General Hospital, Visnagar, From January 2025 To December 2025.

- Group A (LAS): 25 Patients (15 Males, 10 Females) Underwent Lateral Anal Sphincterotomy Com-bined With Fissurectomy.
- Group B (PMS): 25 Patients (13 Males, 12 Females) Underwent Posterior Midline Sphincterotomy Combined With Fissurectomy.

Selection Criteria

Inclusion Criteria: Patients Aged Between 20 And 70 Years Of Either Sex Presenting With a Confirmed Clinical Diagnosis of Chronic Posterior Anal Fissure That Was Refractory to Topical or Medical Management.

Exclusion Criteria: Patients Presenting With Complex Fistulae-In-Ano, Concomitant Third-Degree Hemorrhoids, Or Severe Cardiorespiratory

Comorbidities Rendering Them Unfit For Anesthesia.

Surgical Technique: All Procedures Were Performed Under Spinal Anesthesia With The Patient In The Lithotomy Position.

- For The LAS Group, the Internal Anal Sphincter Was Divided At The 3 o'clock Position, Separate from the Posterior Fissure Site.
- For The PMS Group, The Internal Sphincter Division Was Executed through the Base of the Chronic Fissure Tract At The 6 o'clock Position.

Postoperative Monitoring For Pain Resolution, Wound Infection, Continence Preservation, And Recurrence Was Carried Out Systematically Over a 5-Month Follow-Up Window.

Results

The Demographic Profile Indicates That The Majority Of Patients (40%, n=20) Fell Into The 30–40 Age Bracket, Followed By 30% (n=15) In The 40–50 Age Range. Overall, 80% Of The Treated Individuals Were Between 20 And 50 Years Of Age.

Table 1: Age Distribution of the Cohort (N=50)

Age Range (Years)	Number Of Patients	Percentage (%)
20–30	5	10%
30–40	20	40%
40–50	15	30%
50–60	2	4%
60–70	8	16%

Table 2: Gender Distribution across Surgical Approaches

Surgical Procedure	Male	Female	Total Patients
Las (Group A)	15	10	25
Pms (Group B)	13	12	25
Total	28	22	50

Table 3: Postoperative Complications and Follow-Up Outcomes

Postoperative Outcome Measure	Lateral Sphincterotomy (LAS)	Posterior Sphincterotomy (PMS)	Midline Sphincterotomy (PMS)	Total Incidence (%)
Persistent Pain	0 (0%)	0 (0%)	0 (0%)	0%
Postoperative Wound Infection	1 (2%)	2 (4%)	0 (0%)	3 (6%)
Fissure Recurrence	0 (0%)	0 (0%)	0 (0%)	0%
Temporary Flatus Incontinence	1 (2%)	2 (4%)	0 (0%)	3 (6%)
Temporary Stool Incontinence	0 (0%)	1 (2%)	0 (0%)	1 (2%)
Permanent Flatus Incontinence	0 (0%)	0 (0%)	0 (0%)	0%
Permanent Stool Incontinence	0 (0%)	0 (0%)	0 (0%)	0%

Clinical Follow-Ups Indicated That Postoperative Wound Infection Was Twice As Common In the PMS Cohort (4%) Compared To The LAS Cohort (2%). Similarly, Temporary Flatus Incontinence Occurred More Frequently In Patients Who Underwent PMS (4%) Than LAS (2%). Only One Instance (2%) Of Temporary Stool Incontinence Was Noted, Specifically In the PMS Group.

Notably, All Cases Of Mild Sphincter Weakness Resolved Spontaneously Within 10 Days Post-Surgery. No Cases Of Permanent Incontinence Or Long-Term Recurrence Were Recorded During The 5-Month Follow-Up Period.

Discussion

Hypertonia Of The Internal Anal Sphincter Is a Well-Established Pathophysiological Element In The Persistence Of Chronic Anal Fissures. Surgical Intervention Effectively Breaks This Cycle By Lowering Resting Anal Canal Pressures, Which Allows The Ischemic Mucosa To Heal. Our Data Demonstrate That The Productive Workforce (Ages 20 To 50) Bears The Highest Burden Of This Condition, Comprising 80% Of Our Study Population. Both Surgical Interventions Provided Complete Relief from Persistent Fissure-Associated Pain and Resulted In Zero Recurrences at the 5-Month Mark. However, Comparative Analysis Highlights Distinct Clinical Advantages For The Las Approach. The Wound Infection Rate Was Lower In the Las Group (2%) Than In The Pms Group (4%). This Difference Is Likely Because The Sphincterotomy Incision In LAS Is Placed In Clean Tissue Away From The Posterior Midline Fissure Bed. Conversely, PMS Involves cutting directly Through the Chronic Ulcer Bed at The 6 o'clock Position, Exposing the Surgical Wound to Higher Fecal Contamination and Poor Drainage, Which Delays Healing. Furthermore, Transient Sphincter Disturbance (Flatus and Stool Incontinence) Was Higher In the PMS Group (4% And 2%, Respectively) Than In the Las Group (2%) And (4%). While All Sphincter Dysfunction Was Temporary And Completely Resolved Within 10 Days, The Lower Rate Of Minor Incontinence In The Las Group Suggests It Provides Better Preservation Of Muscular Control.

Conclusion:

While Both Lateral Anal Sphincterotomy And Posterior Midline Sphincterotomy Combined With Fissurectomy Are Highly Successful At Eliminating Chronic Anal Fissures And Preventing Short-Term Recurrence, Lateral Anal Sphincterotomy (LAS) Remains The Preferred Clinical Approach. LAS Offers a Superior Safety Profile, Including Reduced Rates Of Wound Infection, Faster Localized Tissue Healing, And Minimal Risk Of Transient Fecal Or Flatus Incontinence.

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